CLINICAL EFFICACY OF DIAPEUTIC AND X-RAY SURGICAL INTERVENTIONS IN COMPLEX SURGICAL TREATMENT OF ACUTE PURULENT CHOLANGITIS

Shonazarov Iskandar Shonazarovich
Samarkand State Medical University

Narzullayev San'at Inoyatovich
Samarkand State Medical University

Achilov Mirzakarim Temirovich
Samarkand State Medical University

Abduraxmanov Diyor Shukurullaevich
Samarkand State Medical University

Abstract

Purulent cholangitis is one of the most severe and life-threatening complications of biliary tract diseases, which is an acute inflammation of the bile ducts that occurs against the background of a persistent violation of the outflow of bile. Purpose of the study. Improving the results of complex surgical treatment of patients with acute purulent cholangitis of benign genesis by optimizing tactical and technical aspects. Materials and methods. The results of surgical treatment of 144 patients with acute purulent cholangitis were analyzed. Results. Staged surgical treatment, taking into account the severity of acute purulent cholangitis and the use of preliminary decompressive interventions on the bile ducts, made it possible to stop the phenomena of cholestasis and purulent intoxication, and improve the results of radical operations. Optimization tactical and technical aspects of the complex surgical treatment of acute purulent cholangitis as a complication of cholelithiasis contributed to the improvement of treatment results due to early relief of cholangitis, prevention of liver abscesses and the development of biliary sepsis. At the same time, a decrease in postoperative purulent - septic and cholemic complications from 24.5% to 12.1%, mortality from 8.2% to 2.4%.

Keywords: *Cholelithiasis, acute purulent cholangitis, surgical tactics.*

INTRODUCTION

Purulent cholangitis is one of the most serious and life-threatening complications of biliary tract diseases, and is an acute inflammation of the biliary tract caused by a persistent violation of bile flow. Gallstone disease is the main cause of bile flow disorders. Every tenth of the population living on earth suffers from gallstone disease, choledocholithiasis occurs as a complication in 20-30% of cases [1, 3, 8, 9, 10, 15, 17].

Purulent cholangitis was previously considered to be associated with mechanical jaundice, but now it is recognized as a separate problem [11, 12, 13, 14, 18]. This is due to its important role in the development of cholangiogenic sepsis

and its high mortality rate (15-60%) [4, 7]. Unsatisfactory results of treatment of acute cholangitis require optimization of tactical and technical aspects of complex surgical treatment of this disease [2, 5, 6, 16, 19].

The purpose of the study. It consists in improving the results of treatment by optimizing the tactical and technical aspects of complex surgical treatment of good-quality acute purulent cholangitis developed as a result of gallstone disease.

MATERIALS AND METHODS

Results of treatment of 144 patients treated with acute purulent cholangitis as a complication of gallstone disease during 2000-2021 are shown. 91 of the patients were women (63.2%) and 53 were men (36.8%), their age ranged from 33 to 81 years, the average age was 53.2±6.2.

In 112 (78%) patients, the duration of diseases of the biliary system was more than 5 years. 73.6%, i.e. 3/4 of patients were admitted to the hospital more than 3 days after the onset of the disease. Cholangitis lasting up to 3 days was found in 38 (26.4%) patients, between 3 and 7 days in 78 (54.2%) patients, and lasting more than 7 days in 38 (26.4%) observations.

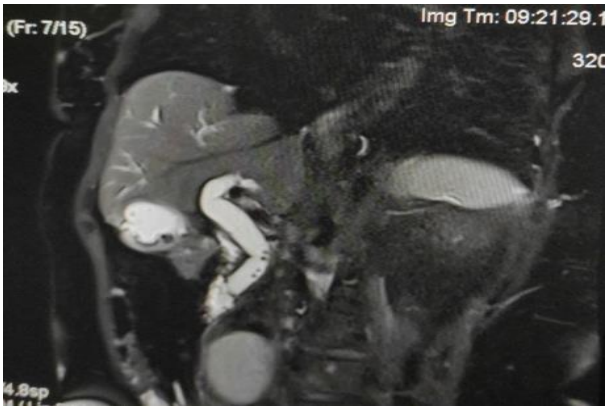
In the first days of an attack of acute cholangitis, patients complained of pain in the right subcostal arch and epigastric region (89.9%), while 4 days or more after the attack, the number of patients complaining of pain was much less (67.3%), but an increase in the number of patients with purulent-inflammatory complications of cholangitis was observed (83.6%).

Acute purulent cholangitis as a complication of gallstone disease occurred in 82 (56.9%) patients due to choledocholithiasis and chronic stone cholecystitis, and in 62 (43.1%) patients due to acute stone cholecystitis and choledocholithiasis, in which acute destructive cholecystitis 29 in 10 patients it was complicated by various types of peritonitis (7 cases spread, 22 local).

Diagnosis of acute purulent cholangitis was made on the basis of clinical appearance (Sharko triad, Reynolds pentad), laboratory and instrumental examination methods (sonography, retrograde pancreatocholangiography, MR-cholangiography) (Fig. 1). The final diagnosis is made based on specific changes in the bile duct wall and bile fluid, as well as by determining the bile microflora.

1 – picture. Sonogram (A) and MR - cholangiogram (B). Choledocholithiasis, intrahepatic, extrahepatic bile duct dilatation in acute purulent cholangitis

A



B

RESULTS AND DISCUSSION

Patients are appropriate for the research goals and objectives divided into 2 comparative groups. Comparison group from 2000 to 2009. acute purulent cholangitis, which occurred as a complication of gallstone disease61 (42.4%) patients underwent surgery due to The main group of the research is 2010-2021. During the period, 83 (57.6%) patients were treated by the surgical method developed in the clinic.

Factor analysis shows that 2000–2009. The main reasons for the unsatisfactory results of surgical treatment of patients with acute purulent cholangitis were the development of liver cholangiogenic abscesses and biliary sepsis. Mortality was 8.2% (5 patients died). In the postoperative period, various purulent-septic complications were observed in 15 (24.6%) patients. In all 61 patients, surgical interventions were cholecystectomy, choledocholithotomy, and external drainage of the choledochal. Operations performed through a wide laparotomy incision were performed in 48 (79%) patients, and through a minilaparotomy incision in 13 (21%) patients.

In this case, cholecystectomy and choledocholithotomy were performed on urgent instructions (within 2-3 hours after hospitalization) in 29 (47.5%) patients due to acute destructive cholecystitis, in 12 of them when acute destructive cholecystitis was complicated by peritonitis. Also, in 6 patients, operations on urgent instructions were performed in the presence of an acute biliary obstruction clinic.

Surgical procedures with delayed urgent instructions (within 2-3 days after hospitalization) were performed in 32 (56%) patients without clinical signs of destructive cholecystitis and the development of clinical signs of common bile duct obstruction prevailed.

In this case, the highest number of deaths and purulent septic complications (12.1% and 33.3%) were observed after emergency operations, when acute purulent cholangitis was combined with acute destructive cholecystitis and peritonitis (14.8% and 44.4%, respectively).

Treatment of 83 patients in the main group in 2010-2021 with acute purulent cholangitis developed as a complication of gallstone disease was performed taking into account the criteria specified in the "Severity Classification of Acute Purulent Cholangitis" proposed at the Tokyo (2013) Consensus Conference. Based on these criteria, acute purulent cholangitis was mild in 54 (65%), moderate in 18 (21.6%) and severe in 11 (13.2%) patients.

In patients with acute purulent cholangitis, minimally invasive and open surgical interventions were performed, taking into account the criteria determining the severity of the disease, as well as the presence or absence of acute destructive cholecystitis and peritonitis.

In the main group, 20 patients with moderate (n=18) and severe (n=11) acute purulent cholangitis underwent minimally invasive decompressive interventions in the first stage (table 1).

1 – table Surgical interventions performed in patients with moderate and severe acute purulent cholangitis in the main group (n=29)

Diagnosis	Type of operation		Number of patients	
Acute suppurative cholangitis and sharp destructive cholecystitis	TJMXS, EPST and NBD →	LXE	2	9
	TJMXS, EPST and NBD →	MLXE	3	
	TJMXS →	MLXE, choledocholithotomy	4	
Acute purulent cholangitis, acute destructive cholecystitis and local peritonitis	Laparotomy, XE, choledocholithotomy. Abdominal rehabilitation		4	
Acute purulent cholangitis, chronic stone cholecystitis	EPST and NBD →	LXE	11	16
	MLXE, choledocholithotomy		5	

In this case, percutaneous transhepatic microcholecystostomy (TJMXS) was performed under ultrasound guidance to decompress the gallbladder in 9 patients with acute destructive cholecystitis. Subsequently, 5 of them underwent endoscopic papillosphincterotomy (EPST) and nasobiliary drainage (NBD). In the remaining 4 patients, microcholecystostomy allowed to eliminate the clinic of acute purulent cholangitis. In 11 patients without clinical signs of acute cholecystitis, with symptoms of acute purulent cholangitis, endoscopic transduodenal interventions - lithoextraction with EPST and choledochal drainage were performed in the first stage. In the second stage, laparoscopic cholecystectomy (LXE) was performed on 13 of these 20 patients, and minilaparotomic cholecystectomy (MLXE) was performed on 7, in which 4 MLXE were performed together with choledocholithotomy.

In 4 patients with clinical peritonitis, laparotomy, cholecystectomy, choledocholithotomy and abdominal resection were performed according to urgent instructions. Another 5 patients with worsening clinical symptoms of acute suppurative cholangitis due to unsuccessful attempts to perform EPST underwent XE combined with choledocholithotomy through a minilaparotomy incision.

Thus, two-stage surgical treatment was performed in 11 (61.1%) patients with moderate degree of acute purulent cholangitis and 9 (81.8%) with severe degree.

In mild acute purulent cholangitis, two-stage surgical treatment was performed in 13 (24.1) patients, and one-stage radical surgery was performed in 41 patients (Table 2).

2 – table Surgical interventions performed in patients with mild acute purulent cholangitis in the main group (n=54)

Diagnosis	Type of operation		Number of patients	
Acute suppurative cholangitis and sharp destructive cholecystitis	TJMXS, EPST and NBD →	LXE	6	9
	TJMXS, EPST and NBD →	MLXE	1	
	TJMXS →	MLXE, choledocholithotomy	2	

Acute purulent cholangitis, acute destructive cholecystitis and local peritonitis	Laparotomy, XE, choledocholithotomy and abdominal resection		13	
Acute purulent cholangitis, chronic stony cholecystitis	EPST and NBD →	LXE	3	32
	EPST and NBD →	MLXE	1	
	MLXE, choledocholithotomy		28	

In the surgical treatment of patients with acute purulent cholangitis, percutaneous transhepatic microcholecystostomy was used in 18 (21.7%) patients in the main group. Drainage of the gallbladder was performed through the liver parenchyma under the control of UT in order to ensure the hermeticity of the needle path and to prevent the flow of bile into the abdominal cavity.

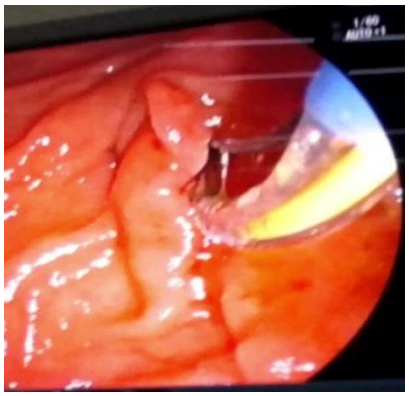
In all cases, drainage was performed using a stylet-catheter with a "basket" at the end of the 4F and 9F diameter "probe" (Fig. 2).

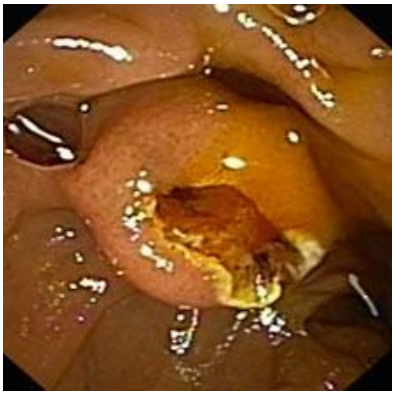
2 - picture. Microcholecystostomy performed through the skin through the liver under the control of an ultrasound scanner

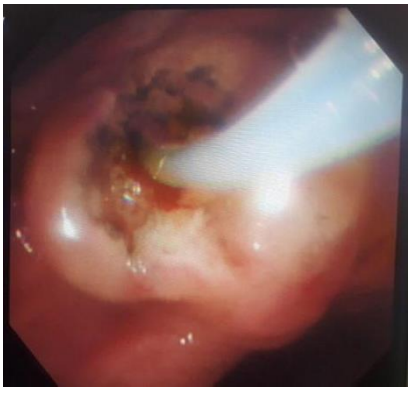
After microcholecystostomy, the gallbladder fluid was completely removed, the cavity was flushed with saline until the incision was cleared, and the drainage was prolonged. The discharge coming out of the drainage tube was visually evaluated and sent for bacteriological examination. Complete emptying of the gall bladder was controlled by sonography.

In the main group, EPST was performed in 27 cases of patients with acute purulent cholangitis. Here, 15 patients with acute purulent cholangitis without acute destructive cholecystitis underwent EST and NBD in the first stage. In 12 patients with predominant clinical signs of acute destructive cholecystitis, this procedure was performed after TJMXS. At the same time, it should be noted that in 9 patients with acute purulent cholangitis, attempts to perform EPST and place NBD were unsuccessful, and in one case, the patient developed acute pancreatitis, which resulted in death (Fig. 3).

Picture 3. Endoscopic papillosphincterotomy and installation of nasobiliary drainage







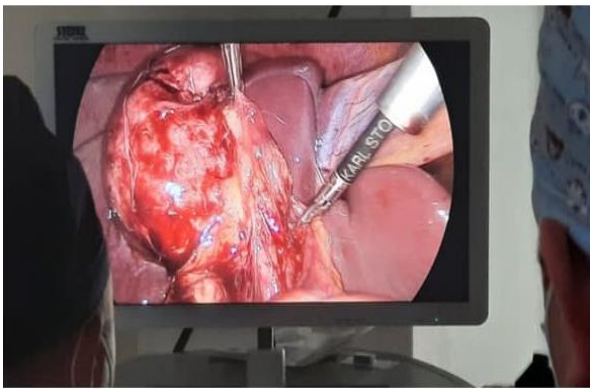
Thus, 2-stage surgical treatment was performed in 33 patients in the main group, which was 39.7%. In these patients, after first decompression of the bile ducts, XE was performed in the second stage at 7-12 days, in which 22 – LXE, 11 – MLXE, and 6 MLXE were performed with choledocholithotomy.

When 50 (60.3%) patients in the main group had acute purulent cholangitis accompanied by acute destructive cholecystitis and peritonitis, radical surgery - XE and choledocholithotomy was performed in 17 patients with a wide laparotomy incision and in 33 patients with a minilaparotomy incision.

LXE was performed using Carl Storz instruments, and XE through a small incision was performed using SAN instruments. Thus, LXE was performed in 22 (26.5%) patients, XE through a small incision in 44 (53%), and through a wide laparotomy incision in 17 (20.5%) patients (Fig. 4).

4 - picture. Performance of cholecystectomy surgical procedure through small incision (A) and laparoscopic method (B) using "Miniasistant " devices

A



B

Among the most serious complications in the comparison group, liver cholangiogenic abscess and biliary sepsis were observed in 4 patients, all of which resulted in death.

Persistent peritonitis resulted in death in 1 patient in our follow-up. There were 5 deaths in all 61 patients in the comparison group who underwent surgery, with a mortality rate of 8.2%.

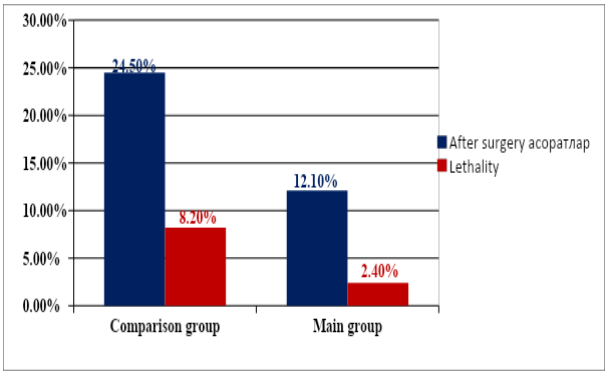
It should be noted that in the main group, 2 of 83 patients (2.4%) died after surgery (1 postoperative pancreatitis, 1 persistent peritonitis). Cholangiogenic abscesses of the liver and biliary sepsis were not observed in the postoperative period.

Purulent-septic complications were noted in 15 (24.5%) patients in the period after surgery in the comparison group.

However, in 2 (3.2%) patients, biloma developed in the subhepatic area and they were drained by recanalization of the contraperture. 5 (11.4%) patients had bile leakage from the drainage tubes placed in the subhepatic cavity, 5 (8.2%) patients underwent repeated surgery to open and drain subhepatic or subdiaphragmatic abscesses. Also, 2 (3.2%) patients underwent reoperation for cholemic intra-abdominal bleeding. Post-surgical wound suppuration was observed in 12 (19.6%) patients.

In the main study group, 10 patients developed postoperative complications, which was 12.1%. That's it with together, in 3 (3, 6%) patients biloma has developed in the subhepatic area and it UTT control cleaned with a puncture under it. in 2 (2.4%) patients grass bladder through the liver as a result of punk Cholemic bleeding from the liver observed. In 2 patients, an external biliary fistula was observed, in 1 case, during relaparoscopy, gall bladder insufficiency was detected and a clip was placed on it again. 1 more observation will be fired. The problem was solved by coagulating the bed of the gallbladder due to the leakage of bile from the bed of the bladder to the abdominal cavity. After EPST, duodenal bleeding was noted in 1 patient, the bleeding was stopped. In 1 patient, a subdiaphrgmatic abscess was formed and was treated with repeated puncture under the control of UTT. Postoperative wound suppuration was observed in 12 (19.6%) patients (Figure 5).

Figure 5. Results of complex surgical treatment of patients with acute purulent cholangitis in both groups



Thus, optimizing the tactical and technical aspects of complex surgical treatment of acute purulent cholangitis developed as a complication of gallstone disease with the use of minimally invasive decompressive procedures and the introduction of biliary tract sanitation allows early elimination of cholangitis, the occurrence of liver abscess, and the prevention of biliary sepsis. gave Reduction of purulent-septic complications from 24.5% to 12.1%, death rate from 8.2% to 2.4% was achieved.

CONCLUSION

1. Factor analysis of acute purulent cholangitis showed that the main cause of death is liver cholangiogenic abscess and biliary

sepsis. Mortality (14.8%) and purulent-septic complications (44.4%) were observed mainly after emergency surgery performed as a result of acute purulent cholangitis combined with acute destructive cholecystitis and peritonitis.

2. Taking into account the severity of acute purulent cholangitis, the use of decompressive interventions in the bile ducts at first allows to stop the cases of cholestasis and purulent poisoning and to improve the results of radical operations. Diabetic and endoscopic transduodenal interventions were necessary for 81.8% of patients with acute purulent cholangitis, 61.6% with moderate and 24.1% with mild.

3. Optimizing the tactical and technical aspects of the complex surgical treatment of acute purulent cholangitis developed as a complication of gallstone disease allows to improve the treatment results by preventing the occurrence of liver abscess and the development of biliary sepsis by early elimination of cholangitis. In this case, reduction of purulent-septic complications from 24.5% to 12.1%, death rate from 8.2% to 2.4% was achieved.

REFERENCES

Abduraxmanov D.Sh. et al. Analysis of surgical treatment options for different types of Mirizzi syndrome // Bulletin of science and education. – 2021. – №. 5-1 (108). – C. 71-76.

Abduraxmanov D.Sh. et al. Biliary peritonitis as a complication of chronic calcular cholecystitis // Bulletin of science and education. – 2021. – №. 5-1 (108). – C. 77-80.

Abduraxmanov D.Sh. et al. Clinical questions extreme currents syndrome mirizzi // Bulletin of science and education. – 2021. – №. 5-1 (108). – C. 65-70.

Agababyan, I., Yarasheva, Z., Nasretdinova, M. The Importance of Echocardiography in the Detection of Early Chronic Heart Failure in Elderly Patients. Kardiologija v Belarusithis link is disabled, 2022, 14(3), pp. 313–318.

Aminov Z. Z. Khakimova S. Z. Davlatov S. S. (2020). Improvement Of Treatment Protocols Of Pain Syndrome In Patients With Chronic Brucellosis. European Journal of Molecular & Clinical Medicine, 7(3), 2540-2545.

Davlatov S. S., Khamdamov B. Z., & Teshaev Sh. J. (2021) Neuropathic form of diabetic foot syndrome: etiology, pathogenesis, classifications and treatment (literature review). Journal of Natural Remedies. Vol. 22, No. 1(2), – P. 147-156.

Inoyatova, F.I., Yusupalieva, G.A., Abzalova, M.Y.A., Sultanova, L.R., Akhmedov, E.A. Features of doppler indices in chronic hepatitis with the transition to liver cirrhosis in children. International Journal of Pharmaceutical Research, 2020, 12(3), pp. 4026–4029.

Inoyatova, F.I., Yusupalieva, G.A., Begmanov, R.B., Bekimbetov, K.N., Akhralov, Sh.F. Possibilities of modern echography technologies in the diagnostics of chronic viral hepatitises in children. International Journal of Pharmaceutical Research, 2020, 12(3), pp. 4040–4043.

Khasan Akhmed, Agababyan, I.R., Mareev Yu., V. Changes in peripheral hemodynamics and platelet aggregation caused by captopril in patients with chronic congestive heart failure. Terapevticheskii Arkhivthis link is disabled, 1986, 58(11), pp. 58–61

Li V.K. Optimal timing of elective laparoscopic cholecystectomy after acute cholangitis and subsequent clearance of choledocholithiasis / V.K. Li, J.L. Yum, Y.P. Yeung // Am. J. Surg. - 2020. – № 4. – PMID: 20381787.

Mardanov, B., Kurbaniyazov, Z., Davlatov, S., & Rakhmanov, K. (2020). Rationale for simultaneous operations on the abdominal organs and the abdominal wall in patients with a ventral hernia. International Journal of Pharmaceutical Research, 12, 1922-1930. doi:10.31838/ijpr/2020.SP2.339

Oripov, F., Blinova, S., Dekhkanov, T., & Davlatov, S. (2020). Development of immune structures of the leaning intestine of rabbits in early postnatal ontogenesis. International Journal of Pharmaceutical Research, 13(1), 299-301. doi:10.31838/ijpr/2021.13.01.042

Qurbonov, N. A., Davlatov, S. S., Rakhmanov, K. E., & Zayniyev, A. F. (2021). Current trends in the management of Mirizzi syndrome: A review of literature. Annals of the Romanian Society for Cell Biology, 25(4), 1927-1932. Retrieved from www.scopus.com

Rakhmanov, K. E., Davlatov, S. S., & Abduraxmanov, D. Sh. (2021). Correction of albendazole disease after echinococcectomy of the liver. International Journal of Pharmaceutical Research, 13, 4044- 4049. doi:10.31838/ijpr/2021.13.01.596

Rizaev E. A. et al. Features of Surgical Correction of Complicated Forms of Cholelithiasis in the Elderly and Senile Age //Texas Journal of Medical Science. – 2023. – T. 18. – C. 17-24.

Rizaev E. A. et al. Surgery of Cholelithiasis in Patients Older Than 60 Years //Texas Journal of Medical Science. – 2023. – T. 18. – C. 25-29.

Rosing D.K. Cholangitis: analysis of admission prognostic indicators and outcomes / D.K. Rosing, C. De Virgilio, A.T. Nguyen [et al.] // Am. Surg. – 2017. – Vol. 73, № 10. – P. 949-954.

Shamsiev A.M., Shamsiev Zh.A., Rakhmanov K.E., Davlatov S.S. Differentiated treatment tactics in surgery of liver echinococcosis. Experimental and Clinical Gastroenterology. 2020;174(5):72-77. (In Russ.) https://doi.org/10.31146/1682-8658-ecg-177-5-72-77.

Zayniyev, A. F., Kurbaniyazov, Z. B., Davlatov, S. S., & Rakhmanov, K. E. (2021). Results of differentiated surgical treatment of benign origin thyroid nodules. Annals of the Romanian Society for Cell Biology, 25(4), 1962-1969. Retrieved from www.scopus.com